

00684.003313

PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:)
: Examiner: Unassigned
Masahiko YOKOTA, et al.)
: Group Art Unit: Unassigned
Application No.: Unassigned)
:
Filed: January 18, 2002)
:
For: IMAGE READING APPARATUS) January 18, 2002

Commissioner for Patents
Washington, D.C. 20231

PRELIMINARY AMENDMENT

Sir:

Prior to examination, the Examiner is respectfully requested to amend the above-identified application as follows.

IN THE SPECIFICATION:

Please substitute the paragraph starting at page 2, line 7 and ending at page 2, line 20 with the following replacement paragraph. A marked-up copy of this paragraph, showing the changes made thereto, is attached.

--At this time, a conventional contact type image sensor will be described regarding its structure. Referring to Figure 11(A), a contact type image sensor comprises an LED 3 as a light source, and a light guiding member 4 for guiding light from the LED 3 to an original. The LED 3 is fixed to one of the lengthwise ends of the light guiding

member 4 (in the case of the example in Figure 11, one LED is attached to the front end). The light emitted from the LED 3 advances through the light guiding member while repeatedly reflected by the interface between the light guiding member 4 and the ambience, and is projected from across the entire lengthwise range of the light guiding member 11.--

Please substitute the paragraph starting at page 3, line 10 and ending at page 3, line 17 with the following replacement paragraph. A marked-up copy of this paragraph, showing the changes made thereto, is attached.

--Referring to Figures 12(A) and 12(B), the frame 7 which contains the structural members of the image sensor is provided with a round positioning hole 7a and an elongated positioning hole 7b. The CIS1 is properly positioned relative to a supporting member 8 (carriage) by fitting the pair of bosses 8a of the carriage 8 in these round and elongated positioning holes 7a and 7b.--

Please substitute the paragraph starting at page 6, line 11 and ending at page 6, line 14 with the following replacement paragraph. A marked-up copy of this paragraph, showing the changes made thereto, is attached.

--Figures 4(A) and 4(B) are drawings showing the internal structure of the image reading portion of the image forming apparatus in the first embodiment of the present invention.--

Please substitute the paragraph starting at page 6, line 21 and ending at page 6, line 26 with the following replacement paragraph. A marked-up copy of this paragraph, showing the changes made thereto, is attached.

--Figure 7 is a drawing showing the structural elements of the image sensor unit in the first embodiment of the present invention: Figure 7(A) is a plan view as seen from above, and Figure 7(B) is a schematic drawing for showing how the frame and carriage are joined.--

Please substitute the paragraph starting at page 7, line 14 and ending at page 7, line 16 with the following replacement paragraph. A marked-up copy of this paragraph, showing the changes made thereto, is attached.

--Figures 11(A) and 11(B) are schematic drawings showing the structure of a typical conventional image sensor unit.--

Please substitute the paragraph starting at page 11, line 23 and ending at page 12, line 14 with the following replacement paragraph. A marked-up copy of this paragraph, showing the changes made thereto, is attached.

--Referring to Figures 4(A) and 4(B), the image sensor unit 108 is movable in the left and right directions of the apparatus, following the guide shaft 103c. It can be moved to any point within its movable range by a combination of a driving pulley 103b and an unshown motor. The image sensor unit 108 is supported by the guiding shaft 103c, with the interposition of a boxy carriage 103a, being kept under the upward pressure generated by a spring 103e. Disposed between the image sensor unit 108 and original placement

glass plate 107 are a pair of spacers 108a. The image sensor unit 108 is structured so that in order for the image sensor unit 108 to read the image of an original placed on the predetermined range, that is, the range from the reading starting position 107a to the reading ending position 107b, of the original placement glass platen 107, the image sensor 108 is movable at a constant speed across the above described predetermined range.--

IN THE CLAIMS:

Please amend Claims 7 through 11 to read as follows. A marked-up copy of Claims 5 through 11, showing the changes made thereto, is attached. Note that all the claims currently pending in this application, including those not presently being amended, have been reproduced below for the Examiner's convenience.

1. An image reading apparatus comprising:
 - an original carriage for carrying an original;
 - a reading element for reading an original image with relative movement therebetween, said reading element having a configuration elongated in a direction crossing with a direction of the movement;
 - a supporting member for supporting said image reading unit;
 - moving means for driving said supporting member to impart the relative movement;
 - a first positioning portion for determining a position of said reading element in the longitudinal direction, of said reading element relative to said supporting member;
 - and

a second positioning portion for determining a position of said reading element in the moving direction, said second positioning portion supporting said reading element while permitting movement thereof in the longitudinal direction relative to said supporting member.

2. An image reading apparatus according to Claim 1, wherein a plurality of said second positioning portions are provided, and said first positional portion is disposed between said second positioning portions.

3. An image reading apparatus according to Claim 1, wherein said first positional portion is provided substantially at a central portion of said heating element.

4. An image reading apparatus according to Claim 1, wherein said first positioning portion permits movement of said reading element relative to said supporting member in the moving direction.

5. An image reading apparatus according to Claim 6, wherein said first positioning portions includes a boss and claw portions nipping said boss, and said reading element and said supporting member have either one of said boss and said claw portion.

6. An image forming apparatus according to Claim 1, wherein a plurality of said second positioning portions are provided, and they are provided adjacent opposite ends of said reading member.

7. (Amended) An apparatus according to Claim 1, wherein said second positioning portion includes a boss and a hole which is elongated in the longitudinal direction of the reading element and which is engageable with said boss, and said reading element of said supporting member have either one of said boss and said elongated hole.

8. (Amended) An image reading apparatus according to Claim 1, wherein said reading element includes reading means for reading the image and a light source.

9. (Amended) An apparatus according to Claim 8, wherein said reading element includes a light source, and imaging means for imaging reflected light from the original on said reading means.

10. (Amended) An image reading apparatus according to Claim 1, wherein said image reading apparatus is usable with an image forming apparatus for forming an image on a recording material on the basis of image information read by said image reading apparatus.

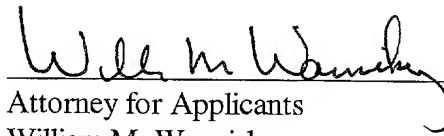
REMARKS

Claims 1 through 11 are present in the application. The specification has been amended to more closely conform the same to the drawings. Claims 7 through 11 have been amended to correct the numbering. Claim 1 is the only independent claim. It is respectfully submitted that no new matter has been presented.

Favorable consideration, entry of this Preliminary Amendment, and early passage to issuance of the application are earnestly solicited.

Applicants' undersigned attorney may be reached in our Washington, D.C. office by telephone at (202) 347-8100. All correspondence should be directed to our below-listed address.

Respectfully submitted,



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**VERSION WITH MARKINGS SHOWING CHANGES MADE TO
SPECIFICATION**

The paragraph starting at page 2, line 7 and ending at page 2, line 20 has been amended as follows.

--At this time, a conventional contact type image sensor will be described regarding its structure. Referring to Figure 11(A) [11], a contact type image sensor comprises an LED 3 as a light source, and a light guiding member 4 for guiding light from the LED 3 to an original. The LED 3 is fixed to one of the lengthwise ends of the light guiding member 4 (in the case of the example in Figure 11, one LED is attached to the front end). The light emitted from the LED 3 advances through the light guiding member while repeatedly reflected by the interface between the light guiding member 4 and the ambience, and is projected from across the entire lengthwise range of the light guiding member 11.--

The paragraph starting at page 3, line 10 and ending at page 3, line 17 has been amended as follows.

--Referring to Figures 12(A) and 12(B) [Figure 12], the frame 7 which contains the structural members of the image sensor is provided with a round positioning hole 7a and an elongated positioning hole 7b. The CIS1 is properly positioned relative to a supporting member 8 (carriage) by fitting the pair of bosses 8a of the carriage 8 in these round and elongated positioning holes 7a and 7b.--

The paragraph starting at page 6, line 11 and ending at page 6, line 14 has been amended as follows.

--Figures 4(A) and 4(B) are drawings [Figure 4 is a drawing for] showing the internal structure of the image reading portion of the image forming apparatus in the first embodiment of the present invention.--

The paragraph starting at page 6, line 21 and ending at page 6, line 26 has been amended as follows.

--Figure 7 is a drawing [for] showing the structural elements of the image sensor unit in the first embodiment of the present invention: Figure 7(A) is a plan view as seen from above, and Figure 7(B) is a schematic drawing for showing how the frame and carriage are joined.--

The paragraph starting at page 7, line 14 and ending at page 7, line 16 has been amended as follows.

--Figures 11(A) and 11(B) are [Figure 11 is a] schematic drawings [drawing for] showing the structure of a typical conventional image sensor unit.--

The paragraph starting at page 11, line 23 and ending at page 12, line 14 has been amended as follows.

--Referring to Figures 4(A) and 4(B) [Figure 4], the image sensor unit 108 is movable in the left and right directions of the apparatus, following the guide shaft 103c. It can be moved to any point within its movable range by a combination of a driving pulley

103b and an unshown motor. The image sensor unit 108 is supported by the guiding shaft 103c, with the interposition of a boxy carriage 103a, being kept under the upward pressure generated by a spring 103e. Disposed between the image sensor unit 108 and original placement glass plate 107 are a pair of spacers 108a. The image sensor unit 108 is structured so that in order for the image sensor unit 108 to read the image of an original placed on the predetermined range, that is, the range from the reading starting position 107a to the reading ending position 107b, of the original placement glass platen 107, the image sensor 108 is movable at a constant speed across the above described predetermined range.--

VERSION WITH MARKINGS SHOWING CHANGES MADE TO CLAIMS

6[7]. An image forming apparatus according to Claim 1, wherein a plurality of said second positioning portions are provided, and they are provided adjacent opposite ends of said reading member.

7[8]. (Amended) An apparatus according to Claim 1, wherein said second positioning portion includes a boss and a hole which is elongated in the longitudinal direction of the reading element and which is engageable with said boss, and said reading element of said supporting member have either one of said boss and said elongated hole.

8[9]. (Amended) An image reading apparatus according to Claim 1, wherein said reading element includes reading means for reading the image and a light source.

9[10]. (Amended) An apparatus according to Claim 8 [9], wherein said reading element includes a light source, and imaging means for imaging reflected light from the original on said reading means.

10[11]. (Amended) An image reading apparatus according to Claim 1,
wherein said image reading apparatus is usable with an image forming apparatus for
forming an image on a recording material on the basis of image information read by said
image reading apparatus.

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